

REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed February 17, 2005. Reconsideration and allowance of the application and pending claims are respectfully requested.

I. Allowable Subject Matter

Applicant appreciates the Examiner's indication that claims 4-6, 13-16, 21-23, 25-28, and 30-32 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

In that it is believed that every rejection has been overcome, it is respectfully submitted that each of the claims that remains in the case is presently in condition for allowance.

II. Claim Rejections - 35 U.S.C. § 103(a)

A. Rejection of Claims 1-3, 12, and 24

Claims 1-3, 12, and 24 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Fahey, et al. ("Fahey," U.S. Pat. No. 5,239,443). Applicant respectfully traverses this rejection.

As has been acknowledged by the Court of Appeals for the Federal Circuit, the U.S. Patent and Trademark Office ("USPTO") has the burden under section 103 to establish a *prima facie* case of obviousness by showing some objective teaching in the prior art or generally available knowledge of one of ordinary skill in the art that would lead that individual to the claimed invention. *See In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596, 1598

(Fed. Cir. 1988). The Manual of Patent Examining Procedure (MPEP) section 2143 discusses the requirements of a *prima facie* case for obviousness. That section provides as follows:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teaching. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and reasonable expectation of success must be found in the prior art, and not based on applicant's disclosure.

In the present case, Fahey does not teach or suggest all the claim limitations. Applicant discusses the Fahey reference and Applicant's claims in the following.

Beginning with independent claim 1, Applicant recites (emphasis added):

1. A heat dissipation apparatus, comprising:
a heat sink that is ***adapted to receive a processor mounted thereto***,
the heat sink comprising an internal chamber that is adapted to receive a fluid flow that removes heat from the heat sink; and
at least one ***external hollow prong*** that extends outwardly from the heat sink, the at least one external hollow prong being in fluid communication with the internal chamber of the heat sink such that fluid forced into the internal chamber flows through and out from the at least one external hollow prong.

As a first matter, Applicant notes that Fahey does not teach or suggest a heat sink that is “adapted to receive a processor mounted thereto”. In the Office Action, the Examiner identifies reference numeral “12” as comprising Fahey’s “heat sink.” As is shown in Figure 1, however, the heat-generating devices 100 are mounted between a heat transfer plate 14 and a substrate 102, and not on the purported “heat sink.” Accordingly, Fahey does not teach receiving any heat-generating device, such as a processor, on the “heat sink” 12.

As a second matter, Applicant notes that Fahey does not teach or suggest an “external” hollow prong. To the contrary, Fahey only teaches internal nozzles 16. As is described by Fahey, the nozzles 16 are designed to be received by cavities 34 formed in the heat transfer plate 14. Fahey describes the reason for this particular arrangement in detail in column 3 from lines 27-52.

In view of the above, Fahey does not render claim 1, or dependent claims 2 and 3, obvious. Applicant therefore respectfully requests that the rejection be withdrawn as to those claims.

Regarding independent claim 12, Fahey does not teach or suggest a heat sink that is “adapted to receive a processor mounted thereto” or “external” hollow prongs, for reasons described above. Accordingly, claim 12 is also allowable over the Fahey reference.

In regard to independent claim 24, Fahey does not teach or suggest “forcing fluid through an internal chamber formed within a heat sink to which the processor is mounted” or “forcing the fluid from the internal chamber of the heat sink through at least one external hollow prong that extends outwardly from the heat sink”, for reasons described above. Therefore, claim 24 is likewise allowable over the Fahey reference.

B. Rejection of Claims 1, 7-11, 17-20, 29, and 34-34

Claims 1, 7-11, 17-20, 29, and 33-34 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kitahara, et al. (“Kitahara,” U.S. Pat. No. 5,583,316). Applicant respectfully traverses this rejection.

Applicant respectfully submits that Kitahara does not teach or suggest all the claim limitations contained in claims 1, 17, and 29. Beginning with independent claim 1, Kitahara does not teach or suggest a heat dissipation apparatus comprising “at least one external hollow prong that extends outwardly from the heat sink”. First, the “prongs” shown in Figures 70-71 are not “hollow”, and the Kitahara reference provides no motivation for such a modification. Second, Kitahara’s “prongs” are not “external” to the device illustrated in the drawings. To the contrary, the prongs are sandwiched between layer 91 and 2 (see Figures 70-71).

Applicant further notes that Kitahara does not teach or suggest an “external hollow prong” that is “in fluid communication with the internal chamber of the heat sink such that fluid forced into the internal chamber flows through and out from the at least one external hollow prong”. First, because Kitahara’s “prongs” are not hollow, they cannot be in fluid communication with anything. Moreover, no fluid can flow “through and out from” the prongs. Instead, the flow in the Kitahara device is all external: air flows around and between the prongs, not “through and out from” them (see Figure 70A).

In view of the above, Kitahara does not render claim 1, or its dependents, obvious. Applicant therefore respectfully requests that the rejection be withdrawn as to those claims.

Regarding independent claim 17, an amendment has been made to the claim such that the subject matter of claim 21, which was identified by the Examiner as being allowable, is now comprised by claim 17. Accordingly, Applicant submits that claim 17, and its dependents, are presently allowable.

Turning to independent claim 29, Kitahara does not teach or suggest a heat dissipation apparatus that includes “at least one hollow prong that extends from the heat sink, the at least one hollow prong being in fluid communication with the internal chamber of the heat sink such that fluid forced into the internal chamber flows through the at least one hollow prong”, for reasons discussed above.

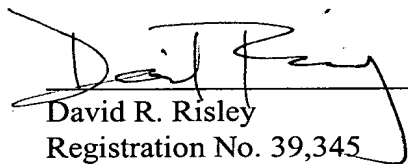
III. Canceled Claims

As identified above, claims 2, 21, and 30 have been canceled from the application through this Response without prejudice, waiver, or disclaimer. Applicant reserves the right to present these canceled claims, or variants thereof, in continuing applications to be filed subsequently.

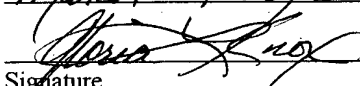
CONCLUSION

Applicant respectfully submits that Applicant's pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

Respectfully submitted,


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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to: Assistant Commissioner for Patents, Alexandria, Virginia 22313-1450, on

March 31, 2005

Signature